No Days 2, 5 or 6

FOR INTERNAL ROUTING ONLY

CODE	NAME	CODE	NAME

APOLLO-8 DSE

Onboard Voice Transcription

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CLASSIFICATION CHANGED TO Unclassified BY AUTHORITY OF MSC letter 2/7/73 Changed by Frances H. Smith per [illegible] 2/14/73

00 01 13 05	CMP	I can't get down there, yet. I don't know where I am.
00 01 13 11	CMP	Okay, where are we?
00 01 13 13	CDR	Those little holes in the - those little things that - see the holes into the wall?
00 01 13 20	CMP	Is it over here?
00 01 13 22	CDR	No, no, right -
00 01 13 24	CMP	Oh, it's over here. Okay.
00 01 13 25	CDR	No, it should be right -
00 01 13 26	CMP	I got one. Right here. Twist a little bit.
00 01 13 30	CDR	Okay.
00 01 13 32	CMP	There's one. Now let's get the other one.
00 01 13 37	CMP	Oh, shoot!
00 01 13 38	CDR	What was that?
00 01 13 40	CMP	My lifejacket.
00 01 13 41	CDR	(Laughter) No kidding?
00 01 13 45	CMP	It hoo[illegible] on the tank here. It flicked up.
00 01 13 52	CDR	Is it blowing up?
00 01 13 53	CMP	It's too early.
00 01 13 57	LMP	Why don't you take it off and give it to me, and I'll try to take it apart while you watch the panel.
00 01 14 05	LMP	Lovell just caught his lifevest on Frank's strut.
00 01 14 14	CMP	It's hard to get off, too.
00 01 14 17	LMP	That's CO in there?
00 01 14 18	CMP	Yes, CO_2.
00 01 14 19	LMP	CO_2?

00 01 14 21	CMP	Yes. I think we ought to just leave the lifevest just the way it is.
00 01 14 23	LMP	Tell you what we'll do: we'll dump it out with the vacuum cleaner over the side there, why don't we.
00 01 14 28	CMP	Put it right back here.
00 01 14 30	CMP	Okay.
00 01 14 32	LMP	Hey, that power looks low.
00 01 14 40	CDR	Yes, turn it off, Jim.
00 01 14 47	CMP	Okay, - -
00 01 14 48	LMP	Why don't you put it up in the spout?
00 01 14 52	CDR	I'm afraid I'm going ... damage.
00 01 14 55	CMP	Okay, when we get communications again, we'll ask them what to - -
00 01 14 58	CDR	Yes, we - we can live with a little CO_2 ...
00 01 15 08	CDR	Where are you going, Jim?
00 01 15 10	CMP	Well, you want me to get this box, don't you?
00 01 15 13	CDR	Yes.
00 01 15 17	LMP	Hey, Jim. When I heard that noise, I looked at the CABIN PRESSURE real quick!
00 01 15 22	CMP	Well, I knew what was wrong as soon as it happened! (Laughter)
00 01 15 32	LMP	I'm just kind of thankful, too.
00 01 15 36	CMP	Okay, gentlemen. I think we'll - I don't know - There's one thing I'm worried about: this helmet.
00 01 15 41	LMP	Where is it?
00 01 15 43	CMP	It's right up here -
00 01 15 46	LMP	Can't you stick it right here?

00 01 15 47 CMP Is there room back there?

00 01 15 52 CMP I could tie it a little bit.

00 01 16 01 CDR Can you give me those ..., Jim?

00 01 16 10 CDR What's that knock?

00 01 16 12 LMP The clock?

00 01 16 16 CDR When I raised my head back, I hit it with this.

00 01 16 20 LMP I think I heard this ... firing over here.

00 01 16 27 CDR How are we as far as the -

00 01 16 30 LMP We're in good shape. I'm standing by for the backup COMM check.

00 01 16 33 CDR Hey, can I put this on the tape about this launch?

00 01 16 36 LMP Yes, it would be a good time to do it.

00 01 16 38 CDR Okay, the launch was nominal in almost every respect. It was no difficulty determining lift-off. Vibrations noticed before the thrust came up to - up to - well, before ... commit launch - commit to launch, and then at - when the hold-down arms released, the vibration went away. There was a lot of noise initially in the cabin. It was difficult to communicate. And then as we - The noise died out, we approached MAX q, when it built back up again. There was no pogo noticeable on the I-C stage. The stagings, to be frank, were all nominal. The only off-nominal factor the whole launch worth mentioning was the slight pogo that was recorded in real time on the S-II stage, and the loud - the audio level inside the - inside the cabin during S-IC burn.

00 01 17 47 LMP Didn't you - didn't you think the thing was still rattling like a freight train before you - as you became clear of the tower? I had the feeling that it was.

00 01 17 58 CDR No, I thought - when we let go -

00 01 18 01 LMP Yes, you could tell it let go, but I meant I thought it kept vibrating. You might make a note that that

was at 1 hour and 16 minutes if you ever want to find your tape when you debrief.

00 01 18 14	CDR	Alright.
00 01 18 26	CMP	Well, I guess I could tie it up here. Let's ask him.
00 01 18 33	CDR	Don't tie it on that hatch thing there.
00 01 18 36	CMP	Not the hatch handle. There's a hatch ...
00 01 18 43	CMP	Okay, what's the g; one g?
00 01 18 47	LMP	One (laughter) - one g; are you kidding?
00 01 18 48	CMP	I mean - during the booster period.
00 01 18 50	CDR	Yes, a little over one g.
00 01 19 02	CDR	You want to hand out - Well, I guess we won't need a flight plan. No.
00 01 19 20	LMP	The camera; configured for the backup COMM check; checked my two circuit breakers.
00 01 19 25	CMP	What time is it? We ought to keep track of the time.
00 01 19 27	LMP	Okay.
00 01 19 29	CMP	I got plenty of time to get back in the couch. Okay, where are the - -
00 01 19 33	LMP	The primary transponder's going OFF for 4 seconds.
00 01 19 42	CMP	Okay, where are the - the - the headpads?
00 01 19 46	LMP	Secondary transponder's coming ON.
00 01 19 48	CDR	The what, Jim?
00 01 19 50	CMP	You want the headpads, don't you?
00 01 19 53	CDR	Well, not yet. Let's wait until we - Oh, you mean before the boost?
00 01 19 57	CMP	Yes.
00 01 19 58	CDR	They're in that CO_2 thing.

00 01 20 01	LMP	They're going to be awful hard to put on; I know that.
00 01 20 03	CDR	I think that's them; I'm not sure.
00 01 20 19	LMP	And also doing a down-voice backup, and up-voice backup.
00 01 20 33	CDR	That's down; that's down.
00 01 20 42	CDR	Life preserver is - just floating.
00 01 20 48	CMP	Well, that's ...
00 01 21 06	LMP	I'm putting tape over these transponder switches.
00 01 21 31	LMP	Sunrise coming up.
00 01 21 51	CDR	How are the fuel cells looking?
00 01 21 56	LMP	Secondary looks okay. It reads a little higher than the rest of them. One, even before launch, showed a little bit lower O_2 flow than H_2. Okay.
00 01 22 28	CMP	You going to put your shoulder harness on again?
00 01 22 32	LMP	I never took mine off. Yes, how do you take them off?
00 01 22 36	LMP	Well, just kind of ... I just kind of loosened my belt, there at the fastener.
00 01 22 47	CDR	I don't know what we'll do with that damn lifevest. There's no way we can ...
00 01 22 55	LMP	Yes, you can - -
00 01 22 56	CMP	Yes, with the - the thing you blow it up with.
00 01 23 16	CDR	It sure is nice to get that helmet and gloves off.
00 01 23 20	LMP	It sure was.
00 01 23 31	CMP	You're recording ...
00 01 23 52	CDR	Wait a minute. Before you get back to the seat, you're supposed to turn the - You're not back in your seat for good, are you? We got a long time.
00 01 24 02	CMP	Before - Oh, we got 2 hours and 20 minutes now.

00 01 24 04	CDR	Yes.
00 01 24 07	CMP	Okay, I'll go back down.
00 01 24 16	CMP	Gee, this is the best flight I ever had.
00 01 24 26	LMP	Because you've got to get those circuit breakers before ... up here.
00 01 24 29	CMP	Yes.
00 01 25 04	CMP	You know, this is very clean.
00 01 25 22	CMP	Here comes the sun.
00 01 25 31	CMP	Well, take a look. It crept up on us.
00 01 25 34	LMP	I think we'll feel better when we close this. See that?
00 01 25 39	CMP	Yes.
00 01 25 44	CMP	Although I noticed it was pretty good, whenever we were over -
00 01 25 53	CMP	Sunrise at 01:25.
00 01 26 01	CMP	Alright now, would you say we lifted off on time, gentlemen?
00 01 26 03	LMP	I'd say we did.
00 01 26 10	CMP	There for a while though, when we were counting down there for the last seconds, I didn't think she was going to wait.
00 01 26 14	CDR	Yes.
00 01 26 16	LMP	Are the safety boilers still going?
00 01 26 17	CMP	Yes, sir.
00 01 26 20	CDR	That's one thing else we should note about the launch. That we didn't hear the noise until about 3 seconds before lift-off, even though ignition commit ... the main ... came on time.
00 01 26 32	CMP	And the tower jettison was quite noticeable, although it wasn't the rumble you get in the DCPS.

00 01 26 48	CDR	You want to say anything else, Bill, that you're working at?
00 01 26 51	CDR	Bill - or Jim, how about taking the RCS check?
00 01 27 00	CMP	She has been a little bit lower than normal ...
00 01 27 24	CMP	Well, we could be ...
00 01 27 29	LMP	Yes.
00 01 27 47	CMP	I'm not too in favor of this attitude as far as - Hey, we've been doing an awful lot of upside down flying.
00 01 27 54	LMP	You can't see any other way.
00 01 27 57	CDR	Can't you see the horizon?
00 01 27 59	CMP	Can you see the horizon?
00 01 28 00	LMP	Yes. I just couldn't the other way.
00 01 28 06	CMP	I guess maybe this is not the - No, wait a second, all I see is ...
00 01 28 17	CMP	Yes, there's some dust out there due to the -
00 01 28 23	LMP	Yes, you ought to give them a little blob on the - -
00 01 28 25	CDR	Let's give them a window status report as far as contamination.
00 01 28 29	LMP	Okay. We want to keep charts from right to left here.
00 01 28 32	CDR	Alright. Number 1 window is clean and has lint on it, and then toward the upper part, that's plus X on the outside pane, it looks like we're already starting to form bits of frost. There was not any evidence of contamination there during staging. Number 2 rendezvous window is good with some, again, specks of lint hanging off the ...
00 01 28 57	CMP	Number 3 window has some dust on it, and in the lower - in the lower right-hand corner, there is a smudge on - what appears to be the outside pane - I'm not too sure it's not the inside; but the visibility appears to be real good - -

00 01 29 15	LMP	But you're never going to be recording there. You've got to talk real loud.
00 01 29 18	CDR	Oh, he can't?
00 01 29 20	LMP	Okay. There's a little smudge on the lower left-hand portion of the center window, and some dust on both the outside and the inside windows, but the visibility is still very good.
00 01 29 36	LMP	Window number - window number 4 is clear. Window number 5 appears clear, but it's in the shadow at the moment, and it's difficult to tell if there's any frost forming at this point.
00 01 29 52	CDR	Okay, very good.
00 01 29 54	CMP	Okay, now let's check to see if we're receiving good.
00 01 30 10	CDR	This is backup COMM check?
00 01 30 12	LMP	Yes, ...
00 01 30 17	LMP	Houston, Apollo 8. Over.
00 01 30 27	CC	Apollo 8, this is Houston. Over.
00 01 30 30	LMP	Roger, Houston; Apollo 8. Standing by for GO for the backup COMM check. Over.
00 01 30 34	CC	Roger. Stand by 1, Bill.
00 01 30 43	CMP	(Singing)
00 01 30 47	CC	Go ahead; inhibit VHF downlink.
00 01 30 53	CC	Apollo 8, this is Houston. Go ahead with backup voice check.
00 01 30 56	LMP	Roger. This is Apollo 8 on backup voice: 1, 2, 3, 4, 5; 5, 4, 3, 2, 1. How do you read? Over.
00 01 31 05	CC	Apollo 8, this is Houston. Go ahead with backup voice check. Over.
00 01 31 16	LMP	Down-voice backup; up-voice backup. S-band is key ON.
00 01 31 20	CC	Apollo 8, Houston. Go ahead with backup voice check. Over.

00 01 31 25	LMP	Roger, Mike. I gave you a count, I'll give you another one. Are you standing by?
00 01 31 30	CC	Roger; standing by.
00 01 31 31	LMP	Roger. This is Apollo 8 with backup voice: 1, 2, 3, 4, 5; 5, 4, 3, 2, 1. Over.
00 01 31 42	CC	Roger, Bill. Reading you weak, but clear.
00 01 31 45	LMP	Roger.
00 01 31 46	CC	Go ahead with normal S-band voice check.
00 01 31 50	LMP	Roger.
00 01 31 52	LMP	Okay, VHF VOL, UP; ... S-band AUX, OFF.
00 01 32 17	LMP	Houston, this is Apollo 8 on normal S-band: 1, 2, 3, 4, 5; 5, 4, 3, 2, 1 - -
00 02 49 47	LMP	Okay. Start your watch ... see what time it says.
00 02 49 50	CMP	Huh?
00 02 49 52	LMP	Call out the time, Frank.
00 02 49 54	CDR	59:17, 18.
00 02 49 56	LMP	Okay, 42 is S-II SEP light, OFF.
00 02 50 01	CDR	42?
00 02 50 03	LMP	Okay, you're in EMS MODE, AUTO?
00 02 50 04	CDR	Yes.
00 02 50 05	LMP	Okay.
00 02 50 13	CC	Apollo 8, coming up on 20 seconds to ignition. Mark it, and you're looking very good.
00 02 50 19	LMP	Okay.
00 02 50 20	CDR	Roger.
00 02 50 21	LMP	Call 42.

00 02 50 24	CDR	We're past 42. That was when our light - -
00 02 50 26	LMP	That's 58:42 or - 59 - -
00 02 50 28	CDR	59 - 9, 8, 7 - 4 - 3, 2, light ON. IGNITION.
00 02 50 40	CDR	IGNITION.
00 02 50 41	CC	IGNITION.
00 02 50 45	CDR	Go ahead. Boy, it's going off in yaw.
00 02 50 51	LMP	Okay, the DAP is fine over here.
00 02 50 53	CMP	What's your attitude at ...?
00 02 50 54	CDR	Fine, 45 ...
00 02 50 55	CMP	Okay.
00 02 50 56	LMP	Okay, align yourself in attitude, we got plus or minus 5 degrees.
00 02 51 01	LMP	And the tank pressures?
00 02 51 03	CDR	Tank pressures are good.
00 02 51 04	LMP	Okay.
00 02 51 08	CDR	Are you watching the DELTA-P ...?
00 02 51 10	LMP	Yes.
00 02 51 11	CMP	30 seconds.
00 02 51 14	CMP	You got 18 hours to - -
00 02 51 16	LMP	Don't worry about that.
00 02 51 28	CDR	Everything alright?
00 02 51 41	CMP	60 seconds.
00 02 51 44	CMP	20 seconds off.
00 02 51 58	LMP	Things are looking good over here.

00 02 51 59	CC	Apollo 8, Houston. Trajectory and guidance look good. Over.
00 02 52 02	CDR	Roger; Apollo 8. Good here.
00 02 52 06	CMP	Okay, cutoff at 02:55:51. Okay, we're coming up on 28 000.
00 02 52 18	CC	Apollo 8, Houston. We're predicting cutoff at 02:55:58, and it looks exactly nominal here.
00 02 52 27	CDR	Roger.
00 02 52 28	LMP	02:55:58?
00 02 52 29	CDR	Right.
00 02 52 33	CC	Apollo 8, Houston. We've predicted cutoff 02:55:52 - 52, and that's exactly as it should be.
00 02 52 41	CDR	02:55:52.
00 02 52 42	CMP	Okay.
00 02 52 43	LMP	Shouldn't have that goddamn high flow rate up there.
00 02 52 52	CMP	Coming up on 29 000. Okay, our yaw should be coming off now a little bit.
00 02 52 58	LMP	3 minutes to go.
00 02 53 03	CMP	You should have about 8 degrees of yaw yet, compared to what - 35? A weak 35, now 37. Alright, it was what - 9 degrees?
00 02 53 16	CDR	Hey, that O_2 is pegged high, Bill.
00 02 53 18	LMP	Yes, I know. It's just a little warmer up here. I'd - I'm looking at the DELTA-P here. The surge tank in the tank 1 ... nothing else to worry about.
00 02 53 31	CMP	30 000.
00 02 53 41	CC	Apollo 8, Houston. You're looking good here; right down the center line.
00 02 53 44	CDR	Roger; Apollo 8.

00 02 53 52	CMP	Coming up on 31 000.
00 02 54 03	CDR	How's the cabin pressure, Bill?
00 02 54 05	LMP	Holding good.
00 02 54 16	CMP	Coming up on 31 5.
00 02 54 21	CMP	02:54.
00 02 54 22	CDR	What time ...?
00 02 54 24	CMP	02:54:56.
00 02 54 32	CMP	02:55:52.
00 02 54 52	LMP	1 minute to go.
00 02 54 54	CC	Apollo 8, Houston. You're looking good. Right down the old center line.
00 02 54 58	CDR	Apollo 8 - -
00 02 55 05	CMP	...
00 02 55 19	CMP	Stand by.
00 02 55 22	CMP	30 seconds to go. 34 000. You got the card?
00 02 55 27	CDR	Yes.
00 02 55 29	CMP	Did you see the card, Bill?
00 02 55 30	LMP	I got it.
00 02 55 33	CMP	Okay.
00 02 55 36	CMP	35 000. We should have good ...
00 02 55 38	CDR	Alright, 15 coming up here.
00 02 55 42	CMP	Real fine. 10 seconds.
00 02 55 47	CMP	35 - 35 1.
00 02 55 48	LMP	How's your inertial velocity?
00 02 55 50	CMP	Velocity's looking fine.

00 02 55 53	CMP	5, 4, -
00 02 55 57	CDR	Okay, we got SECO right on the money.
00 02 55 59	CC	Roger; understand SECO.
00 02 56 02	CMP	I got a ... light; 2 seconds late on SECO. ... got the tape recorder.
00 02 56 10	SC	... SECO ... gimbal ...
00 02 56 15	CDR	Jim. Go ahead, Bill.
00 02 56 16	LMP	SECO plus 10 seconds, light OFF. S-IVB goes to attitude hold 20 seconds and begin venting.
00 02 56 21	CDR	Okay.
00 02 56 22	LMP	S-IVB will maneuver to ORB RATE, heads down at 0.3 of a degree per second.
00 02 56 27	LMP	Okay, record V_i.
00 02 56 30	CMP	V_i.
00 02 56 31	LMP	Give it to me.
00 02 56 32	CMP	I'll give it to you. V_i was 34 - 35452.
00 02 56 34	LMP	35452. HDOT?
00 02 56 37	CMP	04550.
00 02 56 40	LMP	HPAD.
00 02 56 41	CMP	Plus 01791.
00 02 56 44	CDR	Let's not go out of there. You leave it like it is.
00 02 56 46	LMP	Okay, KEY RELEASE.
00 02 56 47	CMP	I've got to go to my KEY RELEASE ...
00 02 56 49	LMP	16 92 for KEY RELEASE?
00 02 56 50	CMP	Yes.
00 02 56 52	LMP	KEY RELEASE was 16 83?

00 02 56 55	CMP	Okay, 16 83; DELTA-V_x is 95485.
00 02 57 02	LMP	Y?
00 02 57 03	CMP	Minus 16833.
00 02 57 07	LMP	Z?
00 02 57 09	CMP	Plus 41124.
00 02 57 13	LMP	And DELTA-V_c, Frank?
00 02 57 15	CMP	What's DELTA-V_c, Frank?
00 02 57 16	CDR	Minus 20.6.
00 02 57 19	CMP	Okay, this - this - -
00 02 57 22	LMP	The FLIGHT RECORDER is OFF; TAPE RECORDER is stopped - -
00 03 19 57	LMP	MANUAL ATTITUDE, three, RATE COMMAND.
00 03 19 58	CDR	RATE COMMAND.
00 03 20 01	LMP	Okay, turn controller counterclockwise, plus X, and hold at zero.
00 03 20 03	CMP	Going to zero.
00 03 20 04	LMP	Turn it clockwise - -
00 03 20 05	CMP	Now, wait a second. ...
00 03 20 14	CMP	Yes.
00 03 20 15	CDR	What, this?
00 03 20 16	LMP	Let me attempt to turn it OFF. Give me a 10-second warning on the flight recorder.
00 03 20 20	CMP	Yes. Okay.
00 03 20 23	LMP	13920 ... - -
00 03 20 24	CC	Apollo 8, Houston.
00 03 20 25	LMP	- - 30.

00 03 20 27	CDR	Go ahead, Houston.
00 03 20 28	CC	We have you about 30 seconds prior to separation, and everything is looking good.
00 03 20 32	CDR	Roger.
00 03 20 39	CMP	Okay, I'm coming up on 15 seconds to SEP.
00 03 20 42	CDR	Alright.
00 03 20 45	CMP	10 seconds to go.
00 03 20 48	LMP	You in AUTO?
00 03 20 50	CDR	Yes, AUTO, AUTO, right.
00 03 20 52	LMP	Okay, at zero, turn HAND CONTROLLER counterclockwise, plus X, and hold.
00 03 21 00	LMP	3 seconds, LAUNCH VEHICLE TANK PRESSURE indicator, zero; CM/LV SEP; TRANSLATIONAL COUNTER, NEUTRAL; plus X, OFF; TVC SERVO POWER 1, OFF.
00 03 21 09	CDR	Alright.
00 03 21 10	LMP	Okay, VERB 62, ENTER.
00 03 21 12	CMP	VERB 62, ENTER.
00 03 21 13	LMP	VERB 49, ENTER.
00 03 21 14	CMP	VERB 49, ENTER.
00 03 21 16	LMP	Okay, desired gimbal angles and proceed.
00 03 21 20	CMP	Roger; proceed, now.
00 03 21 22	LMP	Okay, you're notched up by 30 seconds to a minus X of 2-1/2.
00 03 21 26	CMP	... SEP.
00 03 21 27	LMP	Okay, you put your other - you're not around by 30 seconds, so minus X is your roll.
00 03 21 31	CDR	Why can't you call it yaw?

00 03 21 34	LMP	Because we're not - see, we're not -
00 03 21 37	CMP	There's one panel.
00 03 21 39	LMP	After this camera ...
00 03 21 46	CDR	Man, where's the S-IVB? Anybody see it, now?
00 03 21 49	CMP	There it is!
00 03 21 50	CDR	You found it?
00 03 21 51	CMP	Right in the middle. Right in the middle of my window. There's not a panel around.
00 03 21 55	CDR	It's all up to you!
00 03 21 57	CMP	Give me the camera.
00 03 21 58	LMP	Well, we've got some still pictures we can take - -
00 03 22 01	CMP	Could you pitch a little more?
00 03 22 02	CDR	Yes.
00 03 22 03	LMP	We haven't got in here, yet.
00 03 22 08	LMP	f:11, 1/250th.
00 03 22 10	CMP	f:11.
00 03 22 11	CDR	We've SEP'd, Houston. We've got the IV-B right in sight.
00 03 22 19	LMP	Could you pitch just a little more or ...
00 03 22 21	CDR	Which way?
00 03 22 22	LMP	Pitch up, pitch up a little more.
00 03 22 27	CDR	How's that?
00 03 22 33	CMP	I don't see the ... Maybe I can get it in a minute.
00 03 22 46	CMP	Easy on the thrusters.
00 03 22 48	LMP	Don't you think that's enough pictures of it?
00 03 22 51	CDR	Houston, how do you read Apollo 8?

00 03 22 55	CMP	How far away do you think it is?
00 03 22 59	LMP	...
00 03 23 00	CDR	How about the S-band, Bill?
00 03 23 02	LMP	Let me switch the antenna here.
00 03 23 07	CDR	I'm not going to fly around the damn thing. I don't think there's any - do you?
00 03 23 12	CMP	No.
00 03 23 23	CDR	You got lockon?
00 03 23 24	LMP	Yes.
00 03 23 25	CDR	Houston, this is Apollo 8 on VHF and S-band. How do you read?
00 03 23 30	CDR	Read you loud and clear. We've SEP'd; looking good.
00 03 23 35	LMP	You read him loud and clear? I don't - -
00 03 23 37	CDR	Turn your VHF up and your ...
00 03 23 44	LMP	Okay, let's make sure we've done everything here. Get that FLIGHT RECORDER, OFF.
00 03 23 49	CDR	OFF or ON?
00 03 23 50	LMP	OFF. Okay, about 23:50, I want it OFF.
00 03 23 53	CMP	Okay.
00 03 23 54	LMP	23:50, OFF.
00 03 23 57	LMP	At 35:50, I turn it back ON. ... 23:50 ...
00 03 24 05	CMP	Okay, let me see here.
00 03 24 07	LMP	Okay - -
00 03 24 09	CMP	Our EDS POWER is OFF?
00 03 24 10	CDR	EDS POWER is going OFF.
00 03 24 12	LMP	ATT 1/RATE 2.

00 03 24 14	CDR	ATT 1/RATE 2.
00 03 24 15	LMP	Okay, TAPE RECORDER is stopped - -
00 03 28 22	CDR	Houston, Apollo 8. How do you read?
00 03 28 27	CDR	Roger; loud and clear. We are taking pictures of the S-IVB. The postseparation sequence is completed and we seem to have the high gain.
00 03 29 41	CMP	There she is ...
00 03 30 29	CMP	03:36 ... 03:36 ...
00 03 30 39	CDR	Go ahead, Houston; Apollo 8.
00 03 35 22	CDR	Go ahead, Houston; Apollo 8.
00 03 35 32	CDR	We did not.
00 03 35 34	CDR	Do you want us to do that now?
00 03 35 38	CDR	Roger.
00 03 35 44	CDR	We see the earth now, almost as a disk.
00 03 35 51	CDR	We are. Tell Conrad he lost his record.
00 03 35 59	CMP	We have a beautiful view of Florida now. We can see the Cape, just the point.
00 03 36 06	CMP	And at the same time, we can see Africa. West Africa is beautiful. I can also see Gibraltar at the same time I'm looking at Florida.
00 03 36 29	CMP	The center window.
00 03 37 10	CDR	Go ahead, Houston.
00 03 37 34	CDR	Okay. We are listening on VHF Alfa simplex.
00 03 37 45	CDR	We are listening for VHF Alfa simplex.
00 03 38 00	CMP	Roger. Well, Mike, I can see the entire earth out of the center window. I can see Florida, Cuba, Central America, the whole northern half of South America, in fact, all the way down through Argentina and down through Chile.

00 03 38 30	CDR	Stand by. We are going through the separation-maneuver checklist here.
00 03 39 20	CDR	Houston, this is Apollo 8. We've lost sight of the S-IVB here. The separation maneuver may be delayed slightly, or else we will go ahead and make it without having her in sight.
00 03 41 58	CDR	Houston, this is Apollo 8.
00 03 42 02	CDR	When does the S-IVB do that blowdown maneuver?
00 03 43 31	CDR	Go ahead, Houston.
00 03 43 35	CDR	Go ahead.
00 03 56 01	CDR	Boy, it's starting to vent now, blowing down.
00 03 56 09	CDR	The S-IVB is really venting.
00 03 56 31	CDR	05:07:55. That is the nonpropulsive vent, but it's pretty spectacular. It's spewing out from all sides like a huge water sprinkler.
00 03 57 07	CDR	Say again that big vent time, so I can write it down please, Houston.
00 03 57 32	CDR	Roger; thank you.
00 03 58 31	CDR	We're receiving VHF music now, Houston.
00 03 58 48	CDR	I guess we are between 500 to 1000 feet.
00 03 58 57	CDR	Herb Alpert seems pretty good.
00 04 01 42	CDR	Houston, Apollo 8. I ... sugg ... essentially separation maneuver, if it's alright with you.
00 04 02 04	CDR	Houston, Apollo 8.
00 04 02 10	CDR	Roger. I believe we're going to have to vent or thrust away from this thing. We seem to be getting closer.
00 04 05 18	CDR	Go ahead, Houston.
00 04 05 24	CDR	Go ahead, Houston; Apollo 8.

00 04 05 31	CDR	Go ahead, Houston; Apollo 8.
00 04 05 40	CDR	You're loud and clear, Mike. Go ahead.
00 04 05 43	CC	...
00 04 05 57	CDR	I don't want to do that. I'll lose sight of the S-IVB.
00 04 06 36	CDR	Go ahead.
00 04 06 41	CDR	Well, I don't know because I can't see the earth now, Mike.
00 04 06 43	CMP	The earth's out here. Can you see it?
00 04 06 48	CDR	Yes.
00 04 06 51	CDR	We can pitch down some. Jim has the earth in the optics, so we could pitch some and get pretty close to one, I guess.
00 04 07 18	CDR	You got the earth focused in?
00 04 07 22	CMP	...
00 04 07 32	CDR	Go ahead, Houston; Apollo 8.
00 04 07 45	CDR	181?
00 04 07 54	CDR	Well, then zero would be just as good, wouldn't it?
00 04 08 13	CDR	Well, I can't do that. I'll thrust right square into that S-IVB.
00 04 08 21	CDR	What effect - what will he maneuver to as far as the gimbal angle for this blowdown?
00 04 08 58	CMP	... that S-IV ought ...
00 04 09 14	CDR	Okay.
00 04 09 24	CDR	It's about the same. The trouble is it's pointed at us pretty well.
00 04 09 52	CDR	So -
00 04 09 58	CMP	Has it maneuvered yet?
00 04 10 01	CDR	No.

00 04 10 18	CDR	Yes, I understand. I just - as I say, I just can't very well do that now. I don't want to lose sight of this S-IVB.
00 04 10 34	CDR	Okay. As soon as we find the earth, we'll do it.
00 04 10 38	LMP	... would you please pitch outside?
00 04 10 44	CMP	No, the earth is below us, now.
00 04 10 49	LMP	Why don't you roll to your left? That way, you could put the earth out of your ...
00 04 10 56	CDR	Do you see the earth with your sextant, Jim?
00 04 10 58	CMP	No, I don't ... S-IVB ...
00 04 11 03	CDR	Houston, the venting of the S-IVB is terminated.
00 04 11 28	CMP	I think you ought to roll ...
00 04 11 49	CMP	... should be right on the optics.
00 04 13 27	CDR	I'm not getting a zero, ...
00 04 13 54	CDR	Go ahead, Houston; Apollo 8.
00 04 14 07	CDR	No, I'm not even sure we're going to do it yet, Mike. If I can get - We seem to be drifting away from this thing a little bit, although it is still pointing at us quite closer than I'd like.
00 04 14 32	CDR	Okay. Well, right now, our gimbal angles are about - Roll's about 190 and pitch is about 320 and yaw is about 340. We could certainly do it in this position. That would be alright.
00 04 15 30	CDR	And it started to ...
00 04 15 40	CDR	How high are the temperatures, Jim?
00 04 16 05	CMP	Hey, you started to ... there, huh?
00 04 17 06	CMP	... which way it's going to pitch with respect to the earth.
00 04 17 08	CDR	Go ahead, Houston; Apollo 8.

00 04 17 26	CDR	Well, it's as I said before. We can't definitely find the earth. I think that we are in front and a little bit above - a little bit above the - almost in front of the - directly in front of the booster.
00 04 17 44	CDR	Perhaps a little bit horizontally displaced - towards the - Let's see -
00 04 18 02	CMP	The earth should be right over there. Is the earth over there?
00 04 18 09	CMP	Okay, we'll take it to the other side. We don't know ...
00 04 18 21	CDR	Houston, to help you, we are looking right directly above the S-IVB with - the sun is - It's on the right side of the S-IVB and on our - Coming in our left number 1 window.
00 04 18 52	CMP	Oh, here it is. There's the earth over here - -
00 04 18 54	CDR	To the right?
00 04 18 55	LMP	Yes, the earth's kind of low. That will be - It's in our plus-Y, plus-Z direction.
00 04 19 03	CDR	The earth is in our plus-Y, plus-Z direction now, Mike.
00 04 19 24	CMP	..., do you want to do a realign?
00 04 19 36	LMP	GDC align, IMU is ...
00 04 20 13	CMP	What did you do? Did you do the P50?
00 04 20 15	LMP	Yes.
00 04 20 52	CMP	Houston, for information, I am looking through the scanning telescope now, and I see millions of stars; most of them - the venting from the S-IVB.
00 04 21 02	LMP	There you are, Frank.
00 04 21 09	CMP	Definitely; we are in sunlight, and it looks like they are all S-IVB, but we don't know. I am going to attempt a P52 realign at this time and see what I can do. Okay.
00 04 21 22	CDR	Let me talk about the ...

00 04 22 31	LMP	Are you through with this?
00 04 22 37	LMP	Jim always falls that way.
00 04 24 28	CMP	Okay, two balls 54. You see, when you read them ... three balls ... minus 00086, plus 00141, ... Okay, ...
00 04 26 36	CDR	Mike, anything more on this separation maneuver you're on?
00 04 26 58	CDR	That's right. Quite a bit to our rear and down below us - off to the right.
00 04 27 17	CDR	... of us and slightly below us.
00 04 27 23	CDR	It sure is staying close to us.
00 04 27 27	CDR	Jim, doesn't it look slightly below us and slightly ...?
00 04 27 55	CMP	Which way does the - Does anyone know which way the S-IVB pitches?
00 04 28 02	CDR	Mike, can you just tell us which way the S-IVB pitches, and how far it will pitch to the slingshot-maneuver attitude?
00 04 28 51	CDR	Okay. Thank you.
00 04 28 59	LMP	Houston, are you ready to copy the IMU align information?
00 04 29 05	LMP	Alright. Star ID is 03, and star 36; star angle difference 0.01; torquing angle: X, minus 00034; Y, minus 0027; Z, plus 00100. Over.
00 04 29 38	LMP	Roger. Three zeros: 00027.
00 04 29 45	CMP	Houston, we are going to have to hold up on the cislunar navigation until after this next little maneuver.
00 04 29 56	CMP	What did you say your ... was?
00 04 30 14	CMP	... 00016 ...
00 04 31 22	CDR	Go ahead, Mike.
00 04 31 29	CDR	Roger. Stand by.
00 04 33 48	CMP	Okay.

00 04 34 11	CDR	Go ahead, Houston.
00 04 34 15	CDR	Roger. I'm getting the COAS right on it n so it will be accurate.
00 04 34 27	CDR	Okay. With the COAS right on the S-IVB, the roll reads 105, the pitch is 275, and the yaw is about 325.
00 04 34 52	CDR	Roger. That should be 115 for the roll.
00 04 35 52	LMP	Houston, Apollo 8. Over.
00 04 35 59	LMP	Roger. If it will help you any, Mike, the earth is plus Y about 45 degrees in a minus X. I can see it out my side window, and it's a beautiful view with numerous cloud vortex.
00 04 36 25	LMP	Negative. It's 45 degrees in the plus Y, in the XY plane towards minus X. Over.
00 04 36 42	LMP	45 degrees from plus Y to minus X.
00 04 36 51	LMP	It's behind us to the right, if that will help.
00 04 37 13	LMP	I can still see the Cape and isthmus of Central America.
00 04 37 37	CDR	Why do you want to use - do so much, Mike?
00 04 37 52	CDR	Okay.
00 04 37 55	LMP	Why don't you attempt to yaw - Yaw right ... See the earth ...
00 04 38 16	LMP	No, all you got to do is just ... yaw - yaw to the right, and, you'll be ... You'll be over in this direction ...
00 04 38 55	CDR	Mike, do you want me to go ahead and try to do this, or are you going to give me some gimbal angles?
00 04 39 11	CDR	Okay. I don't understand why you want so many feet per second on it, but I think I can - with just a little maneuvering, I can get away from it a lot simpler than tha
00 04 39 30	CDR	Okay.
00 04 39 53	CDR	VHF sounds good.

00 04 40 02	CDR	Could you yaw about 10 degrees to your - your left?
00 04 41 25	CMP	OMNI B.
00 04 42 01	LMP	Go ahead, Houston; Apollo 8.
00 04 42 19	LMP	Okay.
00 04 42 30	LMP	Roger. We are maneuvering to the attitud now.
00 04 43 10	CMP	That look pretty good now?
00 04 43 12	CDR	Yes.
00 04 43 18	CDR	Okay, Houston. I understand you want 8 feet per second burr, is that right?
00 04 43 32	CDR	Well, we are as close to being radially upward as we can determine.
00 04 44 07	CMP	Roger, Houston. We're putti it in now.
00 04 45 04	CDR	We're maneuvering now.
00 04 45 46	LMP	Okay, why don't you window, and do that P47?
00 04 45 54	CDR	Houston, we made the burn at 7.7 plus X, plus 00001 Y, and Z's are all zeros. The gimbal angles: roll 180, pitch 310, and yaw 020.
00 04 46 19	LMP	Okay, Frank, whenever you're ready ...
00 04 46 29	CDR	Did you get that information, Houston?
00 04 46 36	CDR	Read you loud and clear. Did you get the information?
00 04 46 52	CDR	Roger. Did you get that information? The burn was made at - initiated at 04:45.
00 04 47 15	LMP	We're in good shape. Roll right. ... back where the earth used to be.
00 04 47 30	CDR	Okay. Do you want us to transfer that to the CS - to the LM state vector or just leave it alone?
00 04 47 43	CDR	Roger.
00 04 47 45	LMP	You got VERB 66 entered?